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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/665,779

09/19/2003

Daniel J. Scales

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36378

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05/06/2010

VMWARE, INC.
DARRYL SMITH
3401 Hillview Ave.
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EXAMINER

CHANKONG, DOHM

ART UNIT

PAPER NUMBER

2452

NOTIFICATION DATE

DELIVERY MODE

05/06/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipteam@vmware.com
ipadmin@vmware.com

Office Action Summary	Application No. 10/665,779	Applicant(s) SCALES ET AL.	
	Examiner DOHM CHANKONG	Art Unit 2452	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-7, 32-34, 36-43 and 49-59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-7, 32-34, 36-43, and 49-59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

This final rejection is in response to Applicant's amendment filed on 4/19/2010.

Applicant amends claims 1, 3, 32, 34, 37, and 55, adds claim 59, cancels claims 4, 35, and 40, and previously cancelled claims 8-31 and 44-48. Accordingly, claims 1-3, 5-7, 32-34, 36-43, and 49-59.

I. ALLOWABLE SUBJECT MATTER

Claims 1-3, 5-7, 32-34, 36-43, and 49-58 are allowed.

II. CLAIM REJECTIONS - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

A. CLAIMS 1, 37, AND 39 ARE REJECTED UNDER 35 U.S.C §103(A) AS BEING UNPATENTABLE OVER *SAITO*, U.S PATENT NO. 5.257.386, IN VIEW OF *FLYNN*, JR., U.S. PATENT NO. 6.453.392 [*"FLYNN"*], IN FURTHER VIEW OF *ADLUNG ET AL*, U.S. PATENT PUBLICATION NO. 2004|0025166 [*"ADLUNG"*].

The examiner previously cited *Flynn* in the PTO-892 filed on 8/24/2007. All citations in the following mapping are to *Saito* unless otherwise noted.

Claim 59

As to claim 59, *Saito* as modified by *Flynn* and *Adlung* discloses a method for responding to a request to transfer data between a first virtual machine (VM) in a computer system and a

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virtual storage device backed up by a data storage unit within a multipath data storage system, the method comprising:

identifying the request issued by the first VM, the request being a virtual data transfer request, the first VM being one of a plurality of VMs [Fig. 2: disclosing a request containing a virtual start address for main and external storage];

identifying a plurality of paths over which the data could be routed from the computer system to the data storage system and multipath routing information related to a state of each of the possible paths [column 3 «lines 46-63» | column 6 «lines 36-42» : determining whether paths are available], wherein the identification of possible paths includes masking one or more of the data storage units within the data storage system such that the identified plurality of possible paths does not consider the possible paths to the one or more of the masked data storage units [

determining VM-specific information related to the first VM [column 3 «lines 51-56» : each VM has a transfer priority | *Flynn*, column 8 «line 54» to column 9 «line 24»: VM's request includes VM-specific information such as VMID and the path group ID (PGID) | column 4 «lines 22-28»: where the PGID specifies a set of paths associated with the particular VM];

selecting one path of the plurality of paths according to an algorithm, which takes as inputs at least contents of the multipath routing information [column 6 «lines 36-42» : selecting a path based on availability]; and

routing a physical data transfer request corresponding to the virtual data transfer request to the data storage system over the one path that was selected [column 5 «lines 5-39»]

As indicated in the above mapping, *Saito* does not expressly disclose (1) using the contents of the VM-specific information as part of the algorithm for selecting a path or (2)

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masking one or more of the data storage units such that the identified plurality of possible paths does not consider the possible paths. However, both features were well known in the art at the time of Applicant's invention as evidenced by *Flynn* and *Adlung*.

1. *Flynn* discloses using VM-specific information for selecting a path.

Like *Saito*, *Flynn* discloses utilizing virtual machines within a storage system [column 5 «lines 15-22»]. *Flynn* further discloses a VM's request including VM-specific information such as VMID and the path group ID (PGID) where the PGID specifies a set of paths associated with the particular VM.

Flynn's PGID is a basis for path selection because it specifies a particular grouping of paths which are associated with the particular virtual machine. The path used by the VM can only come from this group of paths. The PGID is used to help select a particular path for the VM. Thus, *Flynn*'s VMID and PGID read on Applicant's claimed VM-specific information.

It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have modified *Saito*'s system to include *Flynn*'s teachings. The ability to select paths based on VM-specific information as taught by *Flynn* would improve a traditional system such as the one taught by *Saito* by "preserving data integrity" and optimizing the performance of the storage system [*Flynn*, column 5 «lines 20-22»].

2. *Adlung* discloses masking one or more of the data storage units.

Adlung discloses that it was well known in the art to mask LUNs within a virtual machine system [0011]. *Adlung* further discloses utilizing an access table to "mask" certain storage units from specific virtual machines [0028: the table stores access rights for individual virtual

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machines | 0040: the system does not consider paths to storage units which the virtual machine does not have access (in effect, those storage units are masked from the virtual machine)].

It would have been obvious to one of ordinary skill in the art to have modified *Saito* to include the masking functionality taught in *Adlung*. Such a modification to *Saito* is an example of combining prior art elements (*Saito*'s system for connecting VMs to a storage network and *Adlung*'s masking feature to prevent VMs from accessing specific storage units) according to known methods to yield predictable results (*Saito*'s system modified to include the ability to prevent access to specific storage units within the storage network). *See* MPEP § 2143.

III. CONCLUSION

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOHM CHANKONG whose telephone number is (571)272-3942. The examiner can normally be reached on Monday to Friday [10 am - 6 pm].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thu Nguyen can be reached on (571)272-6967. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DOHM CHANKONG/
Primary Examiner, Art Unit 2452